

WHAT IS CLAIMED IS:

1. A location mechanism for an ultrasonic testing system, the ultrasonic testing system operable to test an object, the system having an energy generator, the energy generator generating sonic energy in the object, the mechanism comprising:

an illumination generator that bathes the object with a first energy;

an energy reception mechanism that receives a second energy emanating from the object;

the second energy emanating from the object in response to the first energy;

the illumination generator and the energy reception mechanism associated with each other in a predetermined spatial relationship;

the energy reception mechanism associated with the energy generator in a predetermined spatial relationship; and

a control circuitry, communicatively coupled to the energy reception mechanism, that determines the spatial relationship between the object and the energy generator based on the reception of the second energy.

2. The location mechanism of Claim 1 wherein the energy generator is a laser.

3. The location mechanism of Claim 1, the first energy comprising electromagnetic energy.

4. The location mechanism of Claim 3 wherein the electromagnetic radiation is in the visible light wavelength.

5. The location mechanism of Claim 4 wherein the energy reception mechanism is a camera.

6. The location mechanism of Claim 4 wherein the energy reception mechanism is an array of photoreceptors.

7. The location mechanism of Claim 3 wherein the electromagnetic radiation is coherent electromagnetic energy.

8. The location mechanism of Claim 7 wherein the energy reception mechanism is a camera.

9. The location mechanism of Claim 7 wherein the energy reception mechanism is an array of photoreceptors.

10. The location mechanism of Claim 3 wherein the illumination generator is a radar generation device.

11. The location mechanism of Claim 3 wherein the electromagnetic radiation is in the infrared wavelength.

12. The location mechanism of Claim 1, the first energy comprising sonic energy.

13. The location mechanism of Claim 1, further comprising CAD data, the CAD data used by the control circuitry to determine the spatial relationship of the object and the energy generator.

14. An ultrasonic testing system for detecting features of an object, the system comprising:

an energy generator, the energy generator producing first energy in the object, the first energy comprising ultrasonic energies;

an illumination generator that bathes the object with a second energy;

an energy reception mechanism that receives a third energy emanating from the object;

the third energy emanating from the object in response to the second energy;

the illumination generator and the energy reception mechanism coupled to each other in a predetermined spatial relationship;

the energy reception mechanism associated with the energy generator in a predetermined spatial relationship; and

control circuitry, communicatively coupled to the energy reception mechanism, that determines the spatial relationship between the object and the energy generator based on the reception of the third energy.

15. The ultrasonic testing system of Claim 13, the second energy comprising electromagnetic energy.

16. The ultrasonic testing system of Claim 15 wherein the electromagnetic radiation is in the visible light wavelength.

17. The ultrasonic testing system of Claim 16 wherein the energy reception mechanism is a camera.

18. The ultrasonic testing system of Claim 16 wherein the energy reception mechanism is an array of photoreceptors.

19. The ultrasonic testing system of Claim 15 wherein the electromagnetic radiation is coherent electromagnetic energy.

20. The ultrasonic testing system of Claim 19 wherein the energy reception mechanism is a camera.

20. An ultrasonic testing system for detecting features on an object, the system comprising:

5       a support, that supports the object;

      an energy generator, the energy generator producing first energy in the object, the first energy comprising ultrasonic energies;

10      an actuator that changes the relative position of the object relative to the energy generator;

      an illumination generator that bathes the object with a second energy;

      an energy reception mechanism that receives a third energy emanating from the object;

15      the third energy emanating from the object in response to the second energy;

      the illumination generator and the energy reception mechanism coupled to each other in a predetermined spatial relationship;

20      the energy reception mechanism associated with the energy generator in a predetermined spatial relationship;

      a first control circuitry, communicatively coupled to the energy reception mechanism, that determines the spatial relationship between the object and the energy generator based 25 on the reception of the third energy;

      a second control circuitry, communicatively coupled to the actuator, that changes the spatial relationship between the object and the energy generator based on the reception of the third energy.